

Claim Listing

1. (currently amended) In a pump having a rotary portion which compels the movement of a fluid by peristaltic compression of resilient tubing containing the fluid, a roller assembly comprising the following:

a rotor having at least one roller mounted in the rotary portion of the pump for contact with the resilient tubing, the at least one roller having a range of rotation in contact with the tubing during pump operation; and
a roller rotor control mechanism adapted and constructed to stop the rotor such that the at least one roller is stopped at a single, predetermined location on the tubing when the pump operation is stopped.

2. (original) A roller assembly in accordance with claim 1, wherein the at least one roller comprises two rollers.

3. (original) A roller assembly in accordance with claim 2, wherein the rollers are spaced apart circumferentially such that the rollers trap a consistent quantity of fluid between them during operation of the pump.

4. (original) A roller assembly in accordance with claim 1, wherein the rotor control mechanism comprises a slip clutch on which the rollers are mounted.

5. (currently amended) A roller assembly in accordance with claim 2, ~~further comprising a~~ wherein the rotor control mechanism is adapted and constructed to cause one of the rollers to stop at a bottom position thereof.

6. (original) A roller assembly in accordance with claim 5, wherein the ~~roller~~ rotor control mechanism comprises a stop-pin and stop bar arrangement.

7. (currently amended) A roller assembly in accordance with claim 2, further comprising a flow control mechanism adapted and constructed to compensate for localized tubing collapse at the ~~roller~~ rotor stop position.

8. (currently amended) In a pump having a rotary portion which compels the movement of a fluid by peristaltic compression of resilient tubing containing the fluid, a roller assembly comprising the following:

a rotor having a pair of rollers mounted at circumferentially spaced-apart positions in the rotary portion of the pump for contact with the resilient tubing, the rollers having a range of rotation in contact with the tubing during pump operation; and

a ~~roller~~ rotor control mechanism adapted and constructed to stop the rotor so that one of the rollers of the pair of rollers is stopped at a single, predetermined location on the tubing when the pump operation is stopped.

9. (original) A roller assembly in accordance with claim 8, wherein the rollers are mounted 180° from one another.

10. (original) A roller assembly in accordance with claim 9, further comprising a pump occlusion spaced from the rollers such that the rollers trap a consistent quantity of fluid between them during operation of the pump.

11. (original) A roller assembly in accordance with claim 8, wherein the rotor control mechanism comprises a slip clutch on which the rollers are mounted.

12. (original) A roller assembly in accordance with claim 9, wherein the rotor control mechanism is adapted and constructed to cause one of the rollers to

stop at a bottom position thereof.

13. (original) A roller assembly in accordance with claim 12, wherein the rotor control mechanism comprises a stop-pin and stop bar arrangement.

14. (original) A roller assembly in accordance with claim 9, further comprising a flow control mechanism adapted and constructed to compensate for localized tubing collapse at the roller stop position.

15. (original) A method for operating a pump having a rotary portion which compels the movement of a fluid by peristaltic compression of resilient tubing containing the fluid comprising the following:

mounting a rotor having at least one roller in the rotary portion of the pump for contact with the resilient tubing, the at least one roller having a range of rotation in contact with the tubing during pump operation;

operating the pump by rotating the rotor roller; and

stopping the rotor roller by using a roller rotor control mechanism to stop the rotor so that the at least one roller is stopped at a single, predetermined location on the tubing when the pump operation is stopped.

16. (currently amended) A method in accordance with claim 15, further comprising wherein mounting comprises mounting a rotor having the at least one roller-comprises-mounting two rollers.

17. (original) A method in accordance with claim 16, wherein mounting comprises further comprising mounting the rotor so that the rollers are to be spaced apart circumferentially, thereby trapping a consistent quantity of fluid between the rollers during operation of the pump.

18. (original) A method in accordance with claim 15, further comprising mounting the rollers on a slip clutch.

19. (currently amended) A method in accordance with claim 16, wherein stopping comprises using the rotor control mechanism to stop the rotor so further comprising stopping one of the rollers is stopped to stop at a bottom position thereof.

20. (original) A method in accordance with claim 16, further comprising compensating for localized tubing collapse at the roller stop position via a flow control mechanism.